

Course Name: Animal Science

Teacher: Mr. J. Curran

Credit: 1 Credit (For completion of full year)

Clock Hours: 182

Grade Level: 10-12

Prerequisites: Ag Tech Exploration

Teaching Resources: Textbook-Delmar-Modern Livestock and Poultry Production, 5th Edition; James R. Gillespie; Copyright--1997; Various videos; Publications from KSU Research and Cooperative Extension Service; Handouts from different livestock meetings; Various magazine articles

Course Description: This class is designed to prepare the student to recognize different breeds and species of livestock used for food and clothing, recreation, or protection. Breeding, feeding, care and management and marketing of beef cattle, dairy cattle, swine, and sheep will be covered. Other species of animals will be discussed as time and desire of students permit.

Animal Science Curriculum Outline

Areas of Instruction/Topic Headings	Week
I. FFA/SAE	2 - 1st Quarter
A. Explanation of CDE's involving Animal Science	
B. Announcement of upcoming FFA events	
C. Balance FFA record book	
D. Complete enterprise analysis for SAE	
E. Student activity: 1) record book will be completed for the SAE 2) Participation in CDE relating to Animal Science	
II. The Livestock Industry	2 - 1st Quarter
A. History	
B. Careers	
C. Importance to society	
D. Student activity: Select a current topic in the Animal Science area and prepare a written report summarizing the topic	
III. Digestive Systems	3 - 1st Quarter
A. Terminology	
B. Parts of the Digestive System	
C. Accessory Organs	
D. Digestive process	
E. Ruminant-parts and functions	
F. Non-ruminant	
G. Student activity: Prepare a poster showing different ruminant and non-ruminant animals and the feed they eat	
IV. Feed Nutrients	3 - 1st Quarter
A. Nutrient groups	
B. Energy nutrients-carbohydrates, fats and oils	
C. Proteins	
D. Vitamins-water soluble or fat soluble	
E. Minerals-major and trace	
F. Water	
G. Student activity-collect samples of different feedstuffs and give general nutrient information about each sample	

- V. Feed Additives and Hormone Implants** 2 - 2nd Quarter
- A. Definitions**
 - B. Additives and Implants for cattle and sheep**
 - C. Additives for swine**
 - D. Implant procedure and technique**
 - E. Mixing of medicated feeds**
 - F. Records to be kept on mixed feeds**
 - G. Student activity: take a field trip to view and check a portable grinder/mixer for medication residue**
- VI. Balancing Rations** 3 - 2nd Quarter
- A. Terminology**
 - B. Ration functions**
 - C. Rules of thumb for balancing rations-cattle, swine, sheep**
 - D. Using the Pearson Square**
 - E. Student activity: 1) work several pearson square problems to balance for protein in a ration; 2) prepare a poster board exhibit showing several sources of concentrates and roughages**
- VII. Animal Reproduction** 3 - 2nd Quarter
- A. Terminology-reproductive parts**
 - B. Signs of Estrus-cattle, swine, sheep, horses**
 - C. Hormones and functions**
 - D. Parturition**
 - E. Dystocia**
 - F. Reading gestation tables**
 - G. Artificial Insemination**
 - F. Student activity: use gestation table to determine approximate time of birthing for given breeding dates**
- VIII. Meats Evaluation and Selection** 3 - 2nd and 3rd Quarter
- A. Identification of cuts**
 - B. Quality grading**
 - C. Yield grading**
 - D. Placing of carcasses, wholesale and retail cuts**
 - E. Student activity: field trip to local packing plant to identify, evaluate, and place several different cuts of meat**
- IX. Breeds and Evaluation of Dairy Cattle** 2 - 3rd Quarter
- A. Breeds and characteristics**
 - B. Evaluation and selection of Dairy cattle**
 - C. Student activity: evaluate, place and defend several classes of dairy cattle, participate in CDE**

- X. Breeds of Beef Cattle** **1 - 3rd Quarter**
A. Importance of beef cattle in U. S.
B. Breed characteristics and Evaluation
C. Student activity: contact a breed association for literature about their breed
- XI. Breeds of Swine** **.5 - 3rd Quarter**
A. Importance of swine in U. S.
B. Breed characteristics and Evaluation
C. Student activity: research and present oral report on one major breed of swine
- XII. Breeds of Sheep** **.5 - 3rd Quarter**
A. Breed and wool characteristics and Evaluation
B. Student activity: prepare bulletin board of sheep breeds
- XIII. Livestock Evaluation and Selection** **3 - 3rd Quarter**
A. Parts of beef, swine and sheep
B. Selection of market livestock
C. Selection of breeding livestock
D. Using EPD's
E. Reasons
F. Student activity: evaluation, selection and reasons on several classes of livestock, participate in CDE
- XIV. Livestock Marketing** **3 - 3rd and 4th Quarter**
A. Terminology in the market place
B. Marketing choices
C. Marketing costs
D. Causes of bruising and shrinkage
E. Calculating selling prices
F. Student activity: calculate the net amount of check when given all information needed on a pen of steers sold out of the feedlot
- XV. Animal Health** **3 - 4th Quarter**
A. Terminology
B. Animal health plan
C. Signs of good animal health
D. Kinds of injections and sites
E. Local disease problems
F. Parasites-internal and external
G. Student activity: select a common disease or parasite and give a six minute presentation
- XVI. Biotechnology in Livestock Production** **2 - 4th Quarter**

- A. Genetic Engineering**
- B. Embryo transfer**
- C. Student activity: prepare a two page written report dealing with some current area of biotechnology in the livestock industry**

XVII. Wildlife Management

2 - 4th Quarter

- A. Terminology**
- B. Habitat**
- C. Identification**
- D. Student Activity: Introduce students to the Wildlife Habitat Contest**

Girard High School

Animal Science

Name _____ SSN ____-____-_____

Instructor _____

RATING SCALE: 3: Skilled, works independently
2: Competent, may need assistance
1: Received instruction, skill undeveloped
0: No exposure, instruction or training

INTEGRATION: (M) Math (S) Science
(E) Language Arts (C) Career Development Skill
(L) Lab Activity

Enrollment Date _____ Completion Date _____ Hours completed _____

_____/_____/_____/_____/_____/_____

I certify that the student received the training in the area indicated.

Student Signature _____ Date _____

Instructor Signature _____ Date _____

Administrator Signature _____ Date _____

I. FFA/SAE

- 3 2 1 0 1. Defines long-range leadership goals
- 3 2 1 0 2. Completes records for budgeting of resources
- 3 2 1 0 3. Calculates cash flow (M)
- 3 2 1 0 4. Compiles inventory of business personal assets/liabilities
- 3 2 1 0 5. Verifies financial statement
- 3 2 1 0 6. Summarizes SAE enterprises
- 3 2 1 0 7. Prepares for CDE's relating to Animal Science (M)(E)(C)(L)
- 3 2 1 0 8. Researches and presents oral report at Food For America program (E)
- 3 2 1 0 9. Practices good salesmanship when selling magazines and fruit in the community
- 3 2 1 0 10. Completes committee assignment tasks on time
- 3 2 1 0 11. Prepares an application in some proficiency area (E)
- 3 2 1 0 12. Leads group discussion

II. The Livestock Industry

- 3 2 1 0 1. Relates the importance of animal agriculture to society
- 3 2 1 0 2. Prepares and gives an oral report on a career in the animal industry (E)
- 3 2 1 0 3. Summarizes and prepares a written report on a current animal industry topic (E)
- 3 2 1 0 4. Defends the use of livestock for food and research

- 3 2 1 0 5. Develops and uses livestock safety checklist
- 3 2 1 0 6. Prepares written report on some aspect of livestock safety (E)

III. Digestive System

- 3 2 1 0 1. Distinguishes between the ruminant and non-ruminant animal (S)
- 3 2 1 0 2. Identifies the parts of the ruminant digestive system (S)
- 3 2 1 0 3. Identifies the functions of each digestive part (S)
- 3 2 1 0 4. Names the four parts of the ruminant stomach
- 3 2 1 0 5. Outlines the major differences in poultry digestion (S)
- 3 2 1 0 6. Summarizes the functions of the non-ruminant digestive system (S)
- 3 2 1 0 7. Prepare a written report on the causes of digestive tract disorders and how to prevent them (E)

IV. Feed Nutrients

- 3 2 1 0 1. Identifies nutrient groups
- 3 2 1 0 2. Differentiates between roughages and concentrates (S)
- 3 2 1 0 3. Designs an exhibit of feedstuffs showing general nutrient information about each

- 3 2 1 0 4. Distinguishes between fats and oils (S)
- 3 2 1 0 5. Explains the differences in vitamins
- 3 2 1 0 6. Prepares an oral report discussing the importance and functions of one nutrient (E)

V. Feed Additives and Hormone Implants

- 3 2 1 0 1. Prepares a written report on the health issues and concerns of using feed additives (E)
- 3 2 1 0 2. Demonstrates how to implant cattle (L)
- 3 2 1 0 3. Compares different implants on the market
- 3 2 1 0 4. Calculates the economic benefits of using implants (M)
- 3 2 1 0 5. Uses correct safety habits when implanting animals (L)
- 3 2 1 0 6. Explains the importance of cleaning mixers after mixing feed additives
- 3 2 1 0 7. Completes records needed when using feed additives
- 3 2 1 0 8. Prepares a written procedure for the cleaning of a grinder/mixer after mixing feed additives (E)
- 3 2 1 0 9. Reads and follows manufacturer withdrawal recommendations

VI. Balancing Rations

- 3 2 1 0 1. Recognizes factors which affect nutritive value and palatability of feed stuffs

- 3 2 1 0 2. Matches livestock needs with different stages of growth and/or production
- 3 2 1 0 3. Understands the different functions of rations
- 3 2 1 0 4. Analyzes a given situation and calculates a ration for that scenario (M)
- 3 2 1 0 5. Calculates protein in a ration using the Pearson Square (M)
- 3 2 1 0 6. Calculates amounts of feed in a ration on a dry matter basis vs. as-fed basis (M)
- 3 2 1 0 7. Calculates a least-cost ration for a given scenario (M)

VII. Animal Reproduction

- 3 2 1 0 1. Compares the reproductive cycles of cattle, swine, sheep, and horses (S)
- 3 2 1 0 2. Selects birthing dates using a gestation table (L)
- 3 2 1 0 3. Explains the function of hormones in the reproductive system (S)
- 3 2 1 0 4. Gives an oral report on dystocia of a selected specie (E)
- 3 2 1 0 5. Compares parturition of different species
- 3 2 1 0 6. Analyze and report on the advantages and disadvantages of artificial insemination (E)

VIII, Meats Evaluation and Selection

- 3 2 1 0 1. Identifies 10 retail cuts of beef, pork, lamb (L)
- 3 2 1 0 2. Calculates yield grade on beef carcasses (M)
- 3 2 1 0 3. Determines quality grade on beef carcasses
- 3 2 1 0 4. Justifies the ranking of classes of wholesale or retail cuts (E)
- 3 2 1 0 5. Places classes of carcasses, wholesale, and/or retail cuts (L)

IX. Breeds and Evaluation of Dairy Cattle

- 3 2 1 0 1. Explains the major breeds of dairy cattle
- 3 2 1 0 2. Reports orally on one breed of dairy (E)
- 3 2 1 0 3. Selects quality animals based upon the Dairy Cattle scorecard (L)
- 3 2 1 0 4. Gives oral reasons for placing of a class (E)
- 3 2 1 0 5. Identifies major parts of the dairy animal (S)

X. Breeds of Beef Cattle

- 3 2 1 0 1. Recognizes the major breeds of beef
- 3 2 1 0 2. Prepares a written report on one beef breed (E)

XI. Breeds of Swine

- 3 2 1 0 1. Compiles the major breeds of swine
- 3 2 1 0 2. Researches and presents an oral report on one major swine breed (E)

XII. Breeds of Sheep

- 3 2 1 0 1. Organizes breeds by wool characteristics
- 3 2 1 0 2. Surveys local area and reports on breeds found locally (E)

XIII. Livestock Evaluation and Selection

- 3 2 1 0 1. Identify the major parts of beef, swine, and sheep (S)
- 3 2 1 0 2. Completes selection of market livestock based on industry desires (L)
- 3 2 1 0 3. Selects breeding livestock with the most desirable traits (L)
- 3 2 1 0 4. Analyzes and orally defends placing on a breeding and market livestock class (E)(L)

XIV. Livestock Marketing

- 3 2 1 0 1. Analyzes a variety of marketing choices
- 3 2 1 0 2. Calculates marketing charges based on a given scenario (M)
- 3 2 1 0 3. Prepares a written report on the causes and controls of bruising and shrinkage (E)
- 3 2 1 0 4. Calculates selling price on market animals (M)

XV. Animal Health

- 3 2 1 0 1. Justifies the need for good animal health
- 3 2 1 0 2. Identifies signs of good animal health (S)
- 3 2 1 0 3. Adheres to recommended injection sites
- 3 2 1 0 4. Selects correct safety precautions while treating animals (L)
- 3 2 1 0 5. Lists local diseases
- 3 2 1 0 6. Identifies various internal and external parasites (S)
- 3 2 1 0 7. Researches and presents a six minute oral report on a local disease or parasite problem (E)

XVI. Biotechnology in Livestock Production

- 3 2 1 0 1. Discusses the use of genetic engineering in animal science
- 3 2 1 0 2. Explains the use of embryo transfer in animal science (S)
- 3 2 1 0 3. Prepares a written report on a current biotechnology issue in animal science (E)

XVII. Career Development Skills

- 3 2 1 0 1. Interprets nonverbal cues (eye contact, posture, gesture)
- 3 2 1 0 2. Participates in group communication activities
- 3 2 1 0 3. Decides whether a problem situation is best solved using computer, calculator, paper and pencil, or mental arithmetic/estimation technique
- 3 2 1 0 4. Checks, edits, and revises for correct information, appropriate emphasis, grammar, spelling and punctuation
- 3 2 1 0 5. Composes, organizes and edits information using a computer
- 3 2 1 0 6. Demonstrates interpersonal skills; positive attitude
- 3 2 1 0 7. Applies steps in decision making process
- 3 2 1 0 8. Responds positively to ideas and suggestions
- 3 2 1 0 9. Identifies fixed and flexible expenses
- 3 2 1 0 10. Creates a plan for solving a problem
- 3 2 1 0 11. Takes responsibility for decisions and actions
- 3 2 1 0 12. Participate in career exploration activities

XVIII. Life Knowledge Skills

- 3 2 1 0 1. Conducting a job search HS 36
- 3 2 1 0 2. Motivation factors HS 22
- 3 2 1 0 3. Opportunities to serve others HS 104
- 3 2 1 0 4. Evaluating plans and goals HS 47